

CLAIMS

1. A method for starting an internal combustion engine comprising a plurality of cylinders, each cylinder having at least one inlet valve and one exhaust valve, the method comprising the steps of:

opening an inlet valve of a first cylinder undergoing a power stroke during a first stroke;

opening an exhaust valve of a second cylinder undergoing a compression stroke during the first stroke; and

opening an exhaust valve of the first cylinder during a second stroke.

2. The method of claim 1 wherein the step of opening an inlet valve comprises the step of opening an inlet valve independently of engine timing.

3. The method of claim 1 further comprising the step of inhibiting fueling of the first cylinder when the inlet valve is opened.

4. A method for starting an internal combustion engine comprising a plurality of cylinders, each cylinder having at least one inlet valve and one exhaust valve, the method comprising the steps of:

opening an inlet valve of any cylinder undergoing a wasted power stroke; and

opening an exhaust valve of any cylinder undergoing a wasted compression stroke.

5. The method of claim 4 further comprising the step of inhibiting fueling of any cylinder undergoing a wasted power stroke.

6. The method of claim 4 wherein the steps of opening an inlet valve and opening an exhaust valve are independent of engine timing.

7. The method of claim 6 wherein the steps of opening an inlet valve and opening an exhaust valve comprise the steps of opening an inlet valve and opening an exhaust valve electro-hydraulically or electro-mechanically.

8. The method of claim 6 wherein the steps of opening an inlet valve and opening an exhaust valve comprise the steps of opening an inlet valve and opening an exhaust valve in response to an engine management system.

9. The method of claim 8 further comprising the step of inhibiting fueling of any cylinder undergoing a wasted power stroke in response to the engine management system.

10. A method for starting an internal combustion engine having a plurality of cylinders, each of the cylinders having an inlet valve and an exhaust valve, the method comprising the steps of:

opening an inlet valve of any cylinder undergoing a power or intake stroke; and

opening an exhaust valve of any cylinder undergoing a compression or exhaust stroke.

11. The method of claim 10 further comprising the step of inhibiting the injection of fuel during the step of opening an inlet valve.

12. The method of claim 10 wherein the steps of opening an inlet valve and opening an exhaust valve are continued until the internal combustion engine reaches a predetermined rotational speed.

13. The method of claim 12 further comprising the step of inhibiting the injection of fuel during the step of opening an inlet valve.

14. The method of claim 13 wherein the step of inhibiting is terminated when the internal combustion engine reaches the predetermined rotational speed.

15. The method of claim 14 further comprising the step of:

terminating the step of opening of an inlet valve of any cylinder undergoing a power stroke after fuel has been injected into the cylinder on an intake stroke.

16. The method of claim 15 further comprising the step of:

terminating the step of opening an exhaust valve of any cylinder undergoing an exhaust stroke after fuel has been injected into the cylinder on an intake stroke.